

Remarks

Claims 1-7, 11-12, 14, and 24-28 are pending in this application. By the foregoing amendment, Applicant seeks to amend claims 1, and 11-12, and cancel claims 10 and 15. These changes are believed to be fully supported by the specification and are not believed to introduce new matter. Thus, it is respectfully requested that the amendments and additions be entered by the Examiner. Based on the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding rejections, and that they be withdrawn.

Rejections under 35 U.S.C. § 103

At paragraphs 1-6, claims 1-3, 5-7, 10-12, 14, and 24-28 were rejected under 35 U.S.C. § 103 as allegedly being obvious over U.S. Patent No. 5,852,866 to Kuettner *et. al.* (hereinafter "Kuettner"), in view of U.S. Patent No. 5,492,856 to Ikeda *et al.* (hereinafter "Ikeda"), and further in view of U.S. Patent No. 5,777,539 to Folker *et. al.* (hereinafter "Folker"). Applicant respectfully traverses this rejection based on the arguments below.

Claim 1:

Claim 1 has been amended with the recitation of dependant claim 10, so that *the n^+ diffusion layer has a fingered pattern shape with $n+$ fingers electrically isolated by regions of polysilicon*. FIG. 28E and page 76, lines 27-31 of the specification provide an example of the n^+ diffusion layer recitation. None of the applied references (i.e. Kuettner, or Ikeda, or Folker) teach or suggest the *fingered pattern shape with $n+$ fingers electrically isolated by regions of polysilicon*, nor does the Office Action even allege this. Accordingly, assuming, *arguendo*, that the cited references can be combined, the cited references do not teach or suggest each and every feature of amended claim 1. Accordingly, the prima facie case for obviousness is not satisfied and therefore the Applicant requests that claim 1 and its respective dependant claims 2-3, 5-7, and 11-12 be passed to allowance.

Claims 14:

Claim 14 recites among other features, a first track on a first substrate layer in first spiral pattern having *a first input and a first output*; a second track disposed on the second layer in a second spiral pattern and having *a second input and a second output*, the second spiral pattern oriented parallel to the first spiral pattern; a pattern of via holes sufficient to couple a varying voltage present along the length of the first track on to the second track; wherein *the first and second inputs* are connected together by a first via hole of the pattern of via holes, and *the first and second outputs* are connected together by a second via hole of the pattern of via holes. (See, claim 14, *emphasis added*).

The Office Action does not address claim 14 explicitly but seems to allegedly rely on Kuettner (FIG. 4) to teach first and second spiral tracks on separate layers, and then relies on Folker to teach the recitation of connecting the multiple layers together with vias. Applicant traverses this rejection for at least the reason discussed below.

First, Applicant traverses this rejection because the combination does not teach each and every feature of pending claim 14. Namely, upon review of FIG. 4 of Kuettner, it is apparent that the double coil 21 and the double coil 22 provide a single inductor that starts with inputs 24 on a first layer, and ends with outputs 23 on a second layer that are connected by vias 25. Accordingly, Kuettner does not teach *a first input and first output on the first layer*, and *a second input and second output on a second layer*, as recited in claim 14. Specifically, it is noted that the top layer of Kuettner includes only inputs 24 with no outputs, and the bottom layer of Kuettner includes only outputs 23, with no inputs. Accordingly, the recited feature of a first input and a first output on a first layer, and a second input and a second output on a second layer, are not taught or suggested by Kuettner, or any of the other mentioned references.

Second, it would be improper to modify the FIG. 4 of Kuettner so as to connect the inputs 24 on the top layer to the outputs 23 on the bottom layer, because doing so would short out the intended inductance of Kuettner, rendering the inductor of Kuettner useless.

Third, it would be improper to extend the plated throughhole 25 to a pattern of via holes, because to do so would short coil 21 to coil 22, and therefore also short the input contact 24 to the output contact 23, thereby also eliminating the desired inductance of

Kuettner. Therefore, no modification of Kuettner can teach *a pattern of via holes sufficient to couple a varying voltage present along the length of the first track on to the second track*, as recited in claim 14, because to do would short out the intended inductance of Kuettner.

Applicant has raised the mentioned deficiencies of Kuettner in the prior Reply (dated 10/31/02), but these deficiencies are curiously not addressed in the most recent Office Action. Accordingly, if the rejection of claim 14 is maintained in the next Office Action using Kuettner (or any other reference), Applicant requests these arguments be specifically addressed and that the features of claim 14 be addressed with specificity, so that prosecution can be meaningfully furthered.

Based on the above discussion, Applicant requests that 35 U.S.C. § 103 rejection be removed, and that claim 14 be pass to allowance.

Claim 24:

Claim 24 is allowable for at least the same reasons as claim 14. Claim 24 includes the first and second spiral patterns on respective first and second layers of a substrate. The first spiral pattern includes a first end and a second end, and the second spiral pattern also includes a first end and a second end, where the respective first and second ends on the two layers are connected together to form a respective input and output for the integrated circuit inductor. (see claim 24)

Claim 24 is allowable for at least the same reasons as discussed for claim 14 above. Namely because Kuettner does not teach or suggest first and second spiral patterns on separate layers, each with first and second ends that are connected together to form first and second outputs. Therefore Applicant requests that claim 24 and dependent claims 25-28 be passed to allowance.

Furthermore, it is noted that dependent claims 26-27 further recite the n^+ diffusion layer with the fingered pattern having n^+ fingers electrically isolated by regions of polysilicon..., and therefore dependent claims 26-27 are separately allowable for their own respective features, in addition to being dependent from an allowable base claim.

For at least the reasons discussed above, Applicant asserts that independent claims 1, 14, and 24, and their respective dependant claims are allowable over the cited references. Accordingly, Applicant requests that these claims be passed to allowance.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Jeffrey Helvey
Attorney for Applicant
Registration No. 44,757

Date: 7/21/03

1100 New York Avenue, N.W.
Suite 600
Washington, D.C. 20005-3934
(202) 371-2600

Version with markings to show changes made***In the Claims:***

Please amend the following claims as shown:

1. (Twice Amended) An integrated circuit inductor comprising:

a substrate;

a spiral inductor metalization pattern disposed on the substrate including a plurality of parallel tracks in a spiral pattern each track having a first end and a second end and having the first ends coupled together and the second ends coupled together; and

a n⁺ diffusion layer disposed in the substrate directly underneath the spiral inductor metalization pattern; the n⁺ diffusion layer has a fingered pattern shape with n⁺ fingers electrically isolated by regions of polysilicon.

11.(Twice Amended) The integrated circuit inductor of claim [10]1, in which the fingered pattern is coupled to a common ground reference.

12.(Once Amended) The integrated circuit inductor of claim [10]11, in which the n⁺ diffusion layer further comprises a second fingered pattern coupled to the common ground reference by a conductive strip that does not provide a ground loop path.

Claims 10 and 15 have been canceled.